RING-BILLED GULLS OF THE GREAT LAKES

BY FREDERICK E. LUDWIG

THE Ring-billed Gull (*Larus delawarensis*) is one of the most interesting of the gulls that breed in the Middle West. The earliest breeding record of this gull for the Great Lakes area is that of Langille (1884:428), who reported it nesting on one of the Western Islands (Georgian Bay) "in immense numbers." Van Winkle (1893:114), Boies (1897:18), and Butler (1898:573) also reported it as breeding extensively on certain islands of the Great Lakes. But it was described by other authors (Gibbs, 1879:495; White, 1893:222; McIlwraith, 1894:47) as merely a migrant in the area during the last quarter of the nineteenth century; and, except for Saunders' report (1907:74) of breeding in large numbers in 1905 on an island in Georgian Bay and on one in northern Lake Huron, in 1906, there were no further published nesting records for the Great Lakes area until 1926, when William I. Lyon (1926:247; 1927:182) banded at least 67 Ring-bills on St. Martins Shoals in a colony which he found to be some four times larger on his next visit in 1927. During the intervening years, the Ring-bill was reported merely as a common migrant through the area (Kumlien and Hollister, 1903:10; Fleming, 1906:442; J. Claire Wood, 1908:325), and as having "formerly" nested on the islands of Lakes Huron and Michigan (Barrows, 1912:54; Bent, 1921:139). The absence of breeding records during this period of some 20 years, and the fact that Van Tyne worked at Hessel in Les Cheneaux Islands, only eight miles from the Shoals, during the summers of 1917 through 1920, without even a sight record of a Ring-billed Gull make it very probable that the Ring-bill did not nest in this area between the end of last century and about 1926, when Lyon discovered the colony established at St. Martins Shoals.

This paper is based mainly on the data I collected with C. C. Ludwig and C. A. Ludwig over a period of nine years (1933 to 1941), during which we banded 18,259 Ring-billed Gulls. The return records from these gulls were reported to us by the United States Fish and Wildlife Service, and data were supplied to us by other banders who have worked with Ring-billed Gulls, namely: G. W. Luther, William I. Lyon, H. E. MacArthur, Irvin Sturgis, Duke Trempe, and Josselyn Van Tyne.[1] Al-

[1] Josselyn Van Tyne of the University of Michigan Museum of Zoology has aided in the research work and the work necessary to compile a bibliography. The United States Lake Survey and the Department of Mines and Resources, Ottawa, Canada, supplied many maps and charts necessary for the work.

[As the *Bulletin* goes to press, we learn from Harrison F. Lewis that Ring-billed Gulls have been banded by Howard H. Krug, Adam Brown, and Lawrence Tyler on Lake Huron and Georgian Bay, and on Lake Ontario by others. Their data has apparently not been included in this paper, but the author is with the U. S. Navy in the southwest Pacific, and we are unable to consult him on apparent omissions and discrepancies. We feel, however, that the material will prove of interest and value to bird students in its present form, and we hope to publish a supplementary paper later.—Ed.]

together some twenty-nine thousand Ring-bills have been banded in the Great Lakes area.

Nesting Distribution in the Great Lakes Region

Ring-billed Gulls have been banded on at least 26 islands in the Great Lakes area. The colonies fall roughly into three main groups: (1) Michigan colonies on Lake Huron; (2) Michigan colonies on upper Lake Michigan; (3) Ontario colonies on Lake Huron (chiefly North Channel and Georgian Bay). Table 1 shows the number (when known) of Ring-bills banded on each island visited since 1926. Only islands with nesting colonies of Ring-bills at the time of visit and islands that had at some previous time supported a nesting colony are listed in the table. Since detailed data were not available from all banders, totals given must be taken as approximations only.

The Michigan colonies in Lake Huron (Group 1) have been by far the largest of all the nesting groups. Beginning in 1926, Lyon visited the St. Martins Shoal colony annually, banding Ring-bills there each year (except 1929) until 1934, when the colony failed. With C. C. and C. A. Ludwig, I began visiting St Martins in 1937, and it was not until 1939[2] that we found the Ring-billed Gulls nesting there again.

On Goose Island, about 25 miles east of St. Martins Shoal, large numbers of Ring-bills were nesting in 1937 and only a few in 1938. In 1939, when the nesting was resumed at St. Martins, no Ring-bills nested on Goose Island, and none during the succeeding years.

In 1931, G. W. Luther found these gulls nesting in numbers on an unnamed island near Canoe Point, Drummond Island, Chippewa County. He banded gulls there yearly until 1934, when this colony also failed, and no colonies were noted in the immediate vicinity until 1941, when Luther found a large colony on Huron Bay Shoals.

In 1933, there was a rather small colony on Scarecrow Island, Alpena County, Michigan. In 1934, the year the St. Martins and Drummond Island colonies failed, the Scarecrow Island colony was about three times as large as in 1933, and in 1935, about 18 times as large. Since that time the population has remained fairly constant. It is the largest single colony of Ring-bills in the Middle West.

The upper Lake Michigan colonies (Group 2) have been studied in detail since 1934. Lyon had made regular banding trips in the area since 1926, but Ring-bills were first found nesting on Delta County islands in 1933, and on various of the Beaver Islands in 1935 and 1936. The growth of this comparatively new nesting area is shown in Table 1.

It is interesting to compare this history of Ring-bills in the Great Lakes region (shown in greater detail in Table 1) with the summary

[2] Lewis (1941:27) reports that in 1939 "an exceptionally late spring" caused the Ring-billed Gulls which arrived at the St. Augustin sanctuary (north shore of the Gulf of St. Lawrence) to leave "about a week after their arrival," and that "they did not return at any time during the summer of that year, nor were they discovered nesting elsewhere."

TABLE 1

RING-BILLED GULLS BANDED IN THE GREAT LAKES REGION 1926–1941

ISLANDS VISITED	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
MICHIGAN, LAKE HURON																
St. Martins Shoal, Mackinac Co.	67	346	713	0	169	450	301	9	0			0	0	122	709	873
Goose Id., Mackinac Co.						0						1744	117	0		0
Squaw Id., Chippewa Co.								0		B						
Unnamed island near Canoe Pt., Drummond Id., Chippewa Co.						121	554	1037	632	0	0	0	0	0	0	0
Huron Bay Shoal, Drummond Id., Chippewa Co.																250
Scarecrow Id., Alpena Co.								102	272	1852	1890	2405	2067	1915	1887	1759
MICHIGAN, LAKE MICHIGAN																
Small Id., Delta Co.						0	0	19	6	5	B					
Gravelly Id., Delta Co.						0	0	23	7	192	20	10		0	0	120
Snake Id., Delta Co.						0						50		7	771	525
Squaw Id., Beaver Islands													9			
Pismire Id., Beaver Islands									0	94	57	134	157	0	0	0
Shoe Id., Beaver Islands						0	0		0	0	0	43	24	12	0	3
Hat Id., Beaver Islands						0	0		0	0	18	0	0	0	0	0
Naubinway Id., Mackinac County					B											
ONTARIO, LAKE HURON																
Limestone Id., Shawanaga Bay, G. B.				18						447						
Halfmoon Id., N. of Saugeen Pen., G. B.										159						
Gull Id., S. W. of Philip Edward Id., G. B.								315		549						
Young Squaw Id., E. of Smith Bay, G. B.								0		189						
Howland Rocks, S. W. of Darch Id., N. C.								365		412						
Minstrel Rock, W. of John Id., N. C.																125
Cousins Ids., S. of John Id., N. C.							12									6
West Id., S. W. of Blind R., N. C.												41	55	25	110	2
Fanny Id., Bayfield Sound, N. C.										12						
Henry Id., Bayfield Sound, N. C.							33	201								
Buller Reef, N. E. of Duck Ids., L. H.										252						
Magnetic Reefs, Cockburn Id., L. H.								B								
Yearly totals (approximate; see text)	67	346	713	18	169	571	900	2071	917	4163	1985	4427	2429	2081	3477	3663
Returns (incomplete data)	5	20	8	1	7	16	11	34	5	75	68	149	62	40	50	....

Abbreviations: G. B.—Georgian Bay
N. C.—North Channel
L. H.—Lake Huron

B—Birds banded; number not known.
O—Island visited; no Ring-billed Gulls on island.

TABLE 2

RETURNS ON RING-BILLED GULLS BANDED IN THE GREAT LAKES REGION

STATE OR PROVINCE	1–6 mo.	1st yr.	2nd yr.	3rd yr.	4th–10th	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Alabama		1	2		1							2	1				
Arkansas			1												1		
Connecticut				1									1				
Florida	37	86	25		2	3	2	2	1	6	30	31	26	20	10	2	6
Georgia	10	6	3	1	1		2		1	2	7	2	1		2	2	1
Illinois	3	4				1			1	2	1				2	1	
Indiana	1	1								1							1
Kentucky		2								1						1	
Louisiana	8	10	3	1						1	6	10		2	2	1	
Massachusetts	1								1								
Maryland	3	4	2	1	1		1			1		1	1	1	2	3	
Michigan	109	21	9	3	6	16	48	18	34	7	3	3	3	3	4	3	6
Missouri	1	1								1				1			
Mississippi	3	5								2	1	3	1		1		
New Brunswick	1							1									
New Jersey	1		1								1				1		
New York	4	5	2			1	1		6			1				1	1
North Carolina	3	7	3	4						3	1	1	4		3	3	2
Ohio	18	8	1			3	5	2	5	7	1				1	1	
Ontario	38	2	1		1	2	15	13	15	4	2						3
Pennsylvania	2	4	1						2	1					1	1	1
Quebec	1	3						3	2								
Saskatchewan	1	1						1	1								
South Carolina	16	5	2						2	3	2		2	2	2	1	
Tennessee		3	1			1							1			2	
Texas	1	3	2		1						1	4	1			1	
Virginia	4	6						1	1	1	2		1	1		3	
West Virginia		2	1												1	2	
Wisconsin	9	2	2				1	3	5	2		1	2				
Totals	275	192	62	11	13	27	75	44	77	45	58	59	45	30	33	28	21

The first five columns give the number of returns during the first six months after banding (June through December), and the first, second, third, and fourth to tenth calendar year after banding. The remaining columns show the distribution (when known) of the same returns according to month. Because of the incompleteness of present available data these figures must be taken as indicative only of general trends.

by Harrison F. Lewis (1941:22) of the Ring-bill colonies on the north shore of the Gulf of St. Lawrence; Audubon found a colony of 22 nests there in 1833; in 1884, M. Abbott Frazar reported a few colonies in the vicinity of Cape Whittle; but apparently, as in the Great Lakes area, there were no further records until 1915, when Charles W. Townsend found a colony near Pointe du Maurier. Lewis notes, as Frazar had, "examples of the scattering of a large colony into several smaller groups, nesting on as many different islands." He adds: "Sometimes these changes are due to evident causes...and sometimes the reasons for them are obscure." During the five-year lapse at St. Martins the mean water level was lower than usual; otherwise the lapse remains unexplained. The data seem to indicate that colonies of Ring-billed Gulls have scattered from the St. Martins Shoal group of colonies throughout upper Lake Michigan, upper Lake Huron, and Georgian Bay.

Returns

Table 2 gives the number of Ring-bills banded per year and the returns received from them, but these data are incomplete since not all returns to other banders have yet reached us. On the 18,259 Ring-billed Gulls I have banded with C. C. and C. A. Ludwig, there have been 496 returns, or 2.7 per cent. On the rather similar Herring Gull, of which we have banded 19,564, there have been 739 returns or 3.8 per cent. The returns furnish important data on distribution by age and season, on winter and summer range, on migration routes, and on mortality.

Distribution of the Gulls After Banding

Table 2 and Maps 1 to 3 illustrate the distribution of the Ring-billed Gulls after banding, as shown by the return records. All of these birds were banded as nestlings in the Great Lakes area. Recoveries were made in 4 provinces of Canada and in 25 states.

Map 1 shows the distribution during the first six months after banding. The greater proportion of the returns from banded young (174 out of 275) were from areas bordering on the Great Lakes, namely, Michigan, Wisconsin, Ohio, and Ontario. Most of these returns occurred in the first four months of life. Late in the fall, a rather large number of the young were returned from the south Atlantic and the Gulf states.

Map 2 shows the distribution during the first calendar year after banding (after December 31 of the year of banding). Out of 192 returns, 86 were from Florida, 19 from the other Gulf states, 30 from the south Atlantic states. Some of the first year birds spend all of the year after banding in the south; hence the large proportion of the returns from that area. Some, however, return north and are taken in the Great Lakes area.

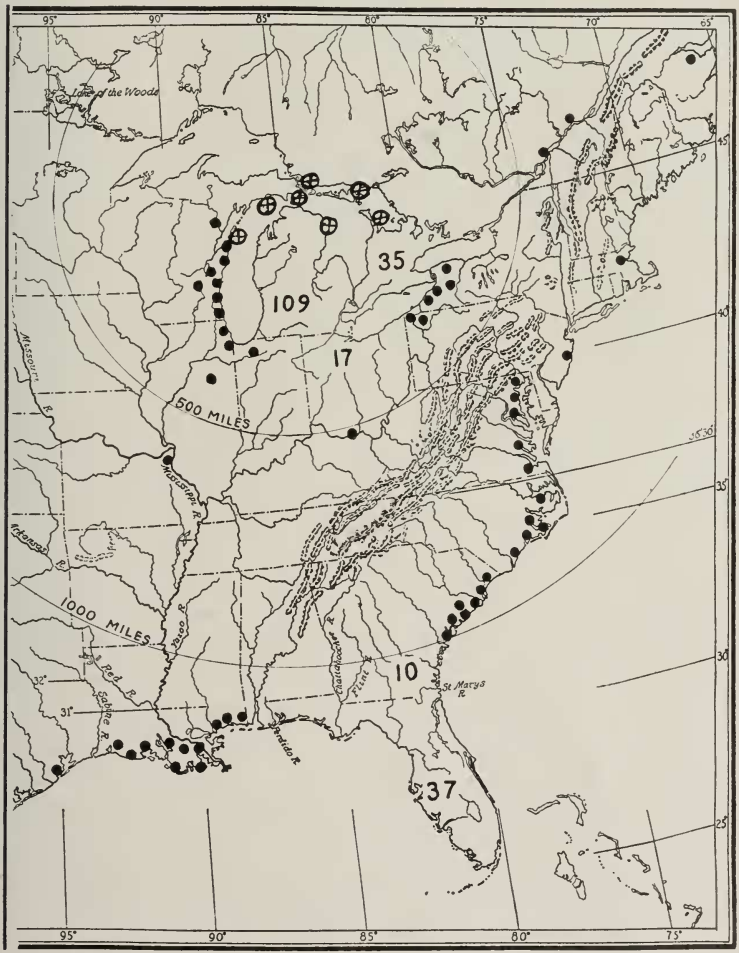
Map 3 (distribution during the second calendar year after banding) also shows a large proportion of the returns (25 out of 62) to be from Florida, a number from other southern states. But of these 62 returns,

48 were made during the period of January through June; hence the large number from the south.

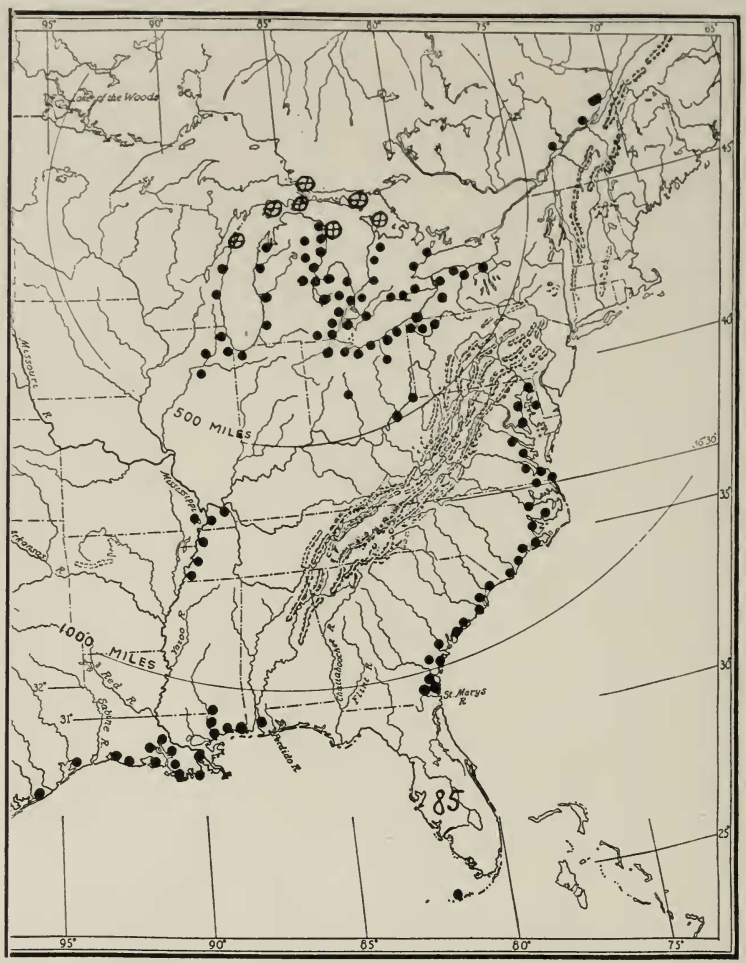
The returns made during the third through the tenth calendar year after banding (Table 2) are too small to give reliable indications of distribution. It should be noted, however, that the oldest returns (5, 6, 7, and 10 year returns) came from the nesting areas in the Great Lakes.

Winter and Summer Range

It is interesting to study the returns according to month (Table 2) in relation to the territory from which they were returned. There are

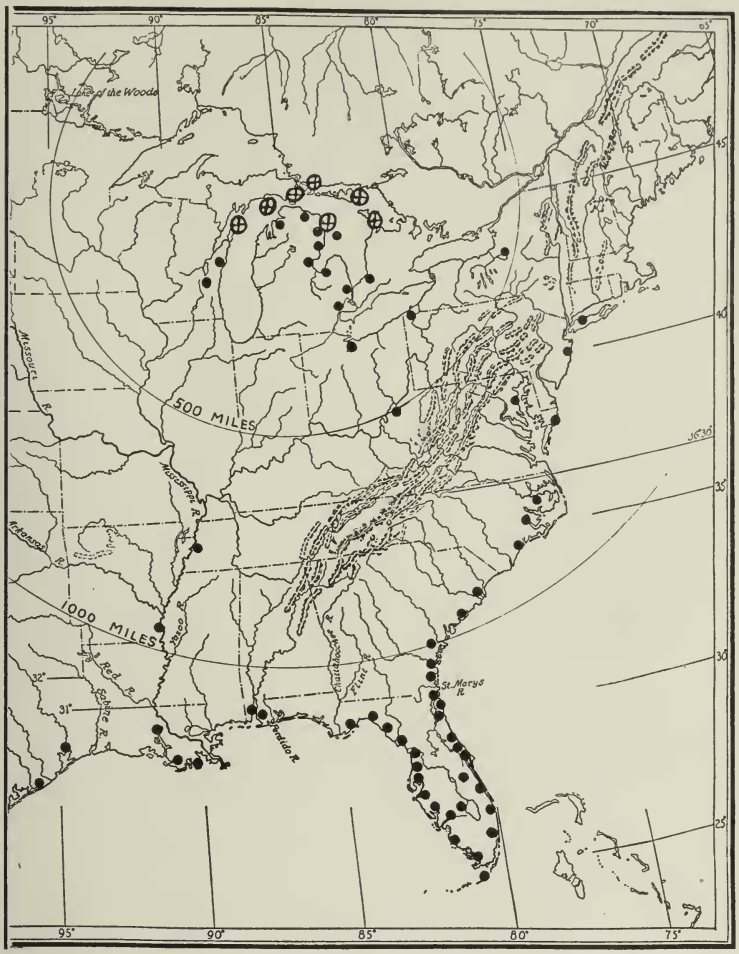


Map 1. Distribution of Ring-billed Gull returns during the first six months after banding. Numerals replace black dots in areas where there are too many returns to be plotted without overlapping. The principal breeding grounds where these young were banded are shown by crosses. (Maps by courtesy of The Historical Publishing Company, Topeka, Kansas.)



Map 2. Distribution of the Ring-billed Gull returns during the first calendar year after banding. Numerals replace black dots in areas where there are too many returns to be plotted without overlapping. The principal breeding grounds where these young were banded are shown by crosses.

two states from which there are returns every month in the year: Florida and Michigan. Most of the Florida returns come during the wintering period (November to April inclusive), when there is a large concentration of both immatures and adults in Florida and a considerable number throughout the south, particularly in the Gulf states. The winter concentration of Ring-billed Gulls is much higher in Florida than in any other state. The ocean beaches are literally lined with these gulls, and many are captured or found dead by the winter tourists. There are scattered recoveries in the south, however, during the other



Map 3. Distribution of Ring-billed Gull returns during the second calendar year after banding. The principal breeding grounds where these gulls were banded are shown by crosses.

seasons, even during the nesting season. These are immatures which may be considered "wandering migrants" during the first year after banding. The returns from Michigan as well as the returns from the other Great Lakes areas, grouped as a unit, are numerous from June through November, particularly numerous in August, September, and October. Many of these are, of course, returns from gulls in the first six months of life, when the mortality is high. Three returns for each winter month from Michigan and scattered returns from the other Great Lakes areas during the winter period (December to May inclusive) indicate that some Ring-bills winter in the region.

There are nine winter records for Michigan: Alpena, December 1, 1931; Charlevoix, December 27, 1936; St. Joseph, December 27, 1939; Straits of Mackinac, January 27, 1930; Saginaw, January 13, 1939; Lake St. Clair, January 18, 1939; Frankfort, February 27, 1931; Grand Haven, February 15, 1932; Sturgeon Bay, Emmet County, February 3, 1935. The records from the Straits, Sturgeon Bay, Charlevoix, Alpena, and Frankfort are north of the published winter range of the species in Michigan.

There is a very small scattering of returns in winter from other northern states (Connecticut, Illinois, Indiana, Massachusetts, New Jersey, New York, and Pennsylvania). The records were, unfortunately, not checked by correspondence with those who sent in the returns. It is possible, therefore, that some of the northern winter returns were from birds that died in the fall and were found in the winter.

Returns from the south Atlantic states (Maryland, North Carolina, South Carolina, and Virginia), grouped as a unit, also cover all months of the year (except July). They are meager in fall, fairly numerous in winter and spring—with 12 returns for May and June. Particularly interesting are the four returns from North Carolina made during the breeding season of the third year after banding—pointing to the possibility of a nesting colony of Ring-billed Gulls on the North Carolina coast.

Migration Routes

Fall and spring returns from the upper Ohio River and along the Mississippi (Illinois, Missouri, and Arkansas) would seem to indicate that one main migration route of the Ring-billed Gull parallels these rivers. Spring and fall returns from Ontario, Quebec, New York, and Pennsylvania suggest another main migration route along the St. Lawrence waterway and Hudson River to the south Atlantic states. Records from New Brunswick may perhaps indicate an alternative route from the waterway to the Atlantic coast. (See Table 2 and Maps 1 to 3.)

Mortality

Since by far the largest number of the returns are from birds found dead, the figures in Table 2 are a rough index to mortality. We find that, as in other species of birds, mortality is highest in the first six months of life, followed closely by mortality in the first calendar year after banding. The figures for the Great Lakes areas (Michigan, Ontario, Ohio, and Wisconsin) show large numbers of returns in August; a smaller number in September; and a second large wave in October. The August returns are presumably the weaker birds, which die soon after the nesting. By September this lethal selection process is more or less complete, and food and weather conditions are favorable, so that fewer birds die. But in October the weather stiffens, food becomes

scarcer, and larger numbers of the gulls are found dead. Through the rest of the year the number of recoveries in these areas is comparatively small.

The data on the circumstances of recovery, available for 483 of the returns, are of some interest here. Most of these (263) were from birds found dead, 57 from birds found sick or injured, 48 from birds shot by hunters or trappers. Sixty-three were from birds, apparently normal, which were captured alive; many of these are returns from Florida, where, during their winter stay, these gulls become quite tame, some of them being recovered three or four times in the same locality by different people. Twelve returns were from birds killed by automobiles or other vehicles; seven from birds caught on fishermen's lines; seven from birds taken as scientific specimens. A scattering of the returns (eight) are from birds killed by cats or dogs; by flying into a high tension wire or flagpole; or by choking on fish.

The oldest Ring-billed Gull we have recorded was ten years old, but consecutive banding has not yet been carried on long enough to enable us to estimate the average length of life of the Ring-bill.

Summary

After an interval of some 20 years, the Ring-billed Gull was again reported nesting in the Great Lakes region about 1926.

Between 1926 and 1941, at least twenty-nine thousand Ring-billed Gulls were banded in the region.

The data indicate that from the earliest of these recent colonies, St. Martins Shoals, the Ring-billed Gulls scattered throughout upper Lake Michigan, upper Lake Huron, and Georgian Bay; they have been found nesting on at least 26 islands in the region.

The colonies do not always remain stationary, but sometimes shift from island to island.

A colony on Scarecrow Island, Alpena County, Michigan, has become the largest single colony in the Middle West.

Winter returns from banded Ring-billed Gulls extend the known winter range northward; summer returns indicate that some of these gulls spend all their first year in the south.

Four returns from North Carolina, made during the breeding season of the third year after banding, point to the possibility of a nesting colony of Ring-billed Gulls on the North Carolina coast.

Fall and spring returns indicate migration routes along the upper Ohio River and the Mississippi, and along the St. Lawrence waterway and Hudson River.

Returns indicate that mortality is highest in the first six months of life, followed closely by mortality in the first calendar year after banding.

The oldest Ring-billed Gull we have yet recorded was ten years old.

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